

## ***Cholecystectomy - Open and Laparoscopic***

### **Introduction**

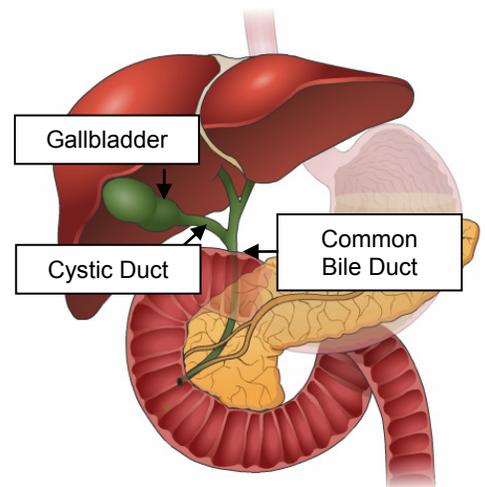
Gallstones are common and can cause severe pain in the abdomen. Sometimes the gallbladder does not work right and the patient has symptoms of gallstones even though they don't have gallstones.

Your health care provider may recommend surgery to remove your gallbladder. The decision whether or not to have this surgery is yours. This reference summary will help you understand the benefits and risks of this surgery.

### **Anatomy**

The gallbladder is a small pouch that sits under the liver on the right side of the abdomen. Juices called bile are made in the liver. Bile helps you digest food.

Bile passes from the liver to the gallbladder. The gallbladder stores bile until it is needed. When you eat fatty foods, the gallbladder squeezes bile through the cystic duct to the common bile duct.



### **Symptoms and Their Causes**

Sometimes bile juices can harden and form stones in the gallbladder. These stones can move and block the cystic duct and cause severe pain. This pain is located mainly in the right side of the abdomen under the last rib. The pain can happen after you eat fatty foods.

Stones can cause nausea, vomiting and fever. They can sometimes cause an infection. If a stone moves to the common bile duct and gets stuck, it can cause pain, inflammation and yellowish discoloration of the skin, called jaundice.

Sometimes patients feel pain and discomfort even though they do not have gallstones. In these cases, the gallbladder may not work right. Health care providers can order special radiological tests to check the function of the gallbladder.

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## Prevention

Your gallbladder is an important organ in helping your body digest fat. Preventing gallstones and infections is always better than trying to treat them after they happen.

Regular exercise can help keep your gallbladder in good condition. A healthy diet can also help prevent problems with your gallbladder. Eating small meals throughout the day instead of large meals may also help.



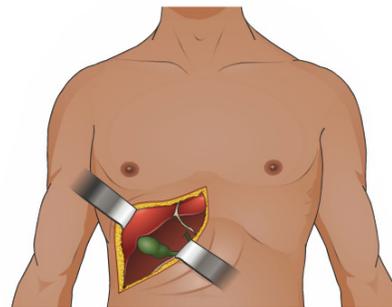
## Alternative Treatments

If you have gallstones, you may want to consider other treatment options before having surgery. Antibiotics can help treat an infection, but they do not eliminate the stones.

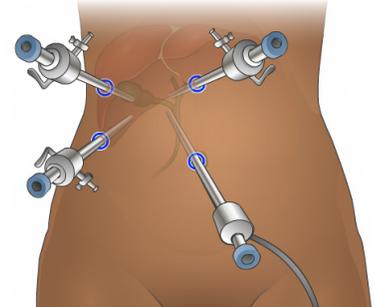
If you have an inflamed pancreas, a severe infection or other complications from gallstones, you may need surgery to remove your gallbladder. When the gallbladder is removed, juices made in the liver can flow to the intestines and help with digestion.

## Procedure

There are 2 ways to take out the gallbladder. One method uses a big skin incision. This operation is known as open cholecystectomy. The other method is done with scopes and smaller incisions. It is known as laparoscopic cholecystectomy.



Open Surgery



Laparoscopic Surgery

The benefits of a laparoscopic operation include a faster recovery period and shorter hospital stay. Not everyone is a candidate for laparoscopic surgery. For example, patients who have had previous surgeries in their abdomen may not be able to have this procedure.

Sometimes the surgeon will start a laparoscopic operation and then switch to an open surgery. This can happen if the surgeon determines that an open surgery is safer for that person. Switching from laparoscopic to an open operation rarely happens. Laparoscopic and open surgeries are performed under general anesthesia. This means you will be asleep during the operation.

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In the open surgery, the surgeon makes an incision in the upper abdomen. The peritoneum, or abdominal cavity, is then entered. The gallbladder is removed.

X-rays may be taken during the surgery to determine if stones are stuck in the common bile duct. Rarely, stones can be present in the common bile duct. If so, the duct may be opened and explored, and the stones will be removed.

If the surgeon explores the bile duct, he or she may insert a drain into it that goes to the outside of the body on the side of the abdomen. This helps the duct heal. A health care provider will take the drain out several days or weeks later. The surgeon then closes the incision.

With the laparoscopic operation, the abdominal cavity is filled with a special gas. One or more small incisions are then made. Scopes are inserted in the abdominal cavity. The gallbladder is separated from the common bile duct. The gallbladder is taken out. A health care provider may take X-rays during the surgery to determine if stones are stuck in the common bile duct.

Rarely, stones may be present in the common bile duct. If so, they can be removed with the scope, or with an open surgery. They can also be removed later during a separate procedure. Your surgeon will determine the most appropriate option for your condition. After the laparoscopic surgery, the small incisions are closed.

## **Risks and Complications**

This surgery is safe. But there are several possible risks and complications. These are unlikely but possible. You need to know about them just in case they happen. By being informed, you may be able to help your health care provider detect complications early.

The risks and complications include those related to anesthesia and those related to any type of surgery.

Risks of general anesthesia include:

- Nausea or vomiting.
- Urine retention.
- Cut lips or chipped teeth.
- Sore throat.
- Headache.



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More serious risks of general anesthesia include:

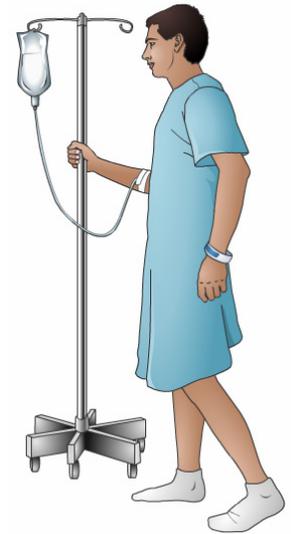
- Heart attacks.
- Strokes.
- Pneumonia.

Your anesthesiologist will discuss these risks with you and ask you if you are allergic to certain medications.

Anesthesia is now safe. But the older you are and the more medical problems you have, the higher the risks. You should make your anesthesiologist aware of any medical problems you have had in the past, such as strokes and lung problems.

Blood clots in the legs can happen due to inactivity during and after the surgery. These usually show up a few days after surgery. They cause the leg to swell and hurt. Blood clots can become dislodged from the leg and go to the lungs, where they will cause shortness of breath, chest pain and possibly death.

It is important to let your health care providers know if any of these symptoms happen. Sometimes the shortness of breath can happen without warning. Getting out of bed shortly after surgery may help decrease your risk of blood clots.



Some of the risks are seen in any type of surgery. These include:

1. Infection, deep in the tissue or in the skin. Infections can involve the abdominal incision. Deep infections may involve the abdominal cavity. This is known as peritonitis. Treating deep infections may require long-term antibiotics and possibly surgery.
2. Bleeding, either during or after the operation. This may require a blood transfusion or another operation. Blood transfusions are rarely needed.
3. Skin scar.

Other risks and complications are related specifically to this surgery. These again are rare. But it is important to know about them.

The liver and the common bile duct could be injured. Injury to the bile duct could cause bile to leak into the peritoneal cavity and even to the outside. You may need one or more operations to repair the damage to the bile duct.

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The intestines and stomach could be injured. The blood vessels going to the liver could be affected. Damage to these structures could be permanent and require other operations. This complication is rare. Death may result in extremely rare situations.

Hernias through the incisions are possible. This happens if the internal wall of the abdomen is weak and the intestines push under the skin. This may require another operation.

The pain may not go away after surgery. Diarrhea that could last for a long time can happen after a gallbladder operation.

### **After the Surgery**

After the operation, a health care provider will transfer you to the recovery room and then to a regular room. A health care provider will connect a tube to one of your veins to give you nutrients until you can eat and drink again.

A health care provider will help you walk as soon as possible after surgery. This helps blood circulate in your legs, which can help prevent blood clots. You may go home the day of the operation or in a few days, depending on which procedure you had and how well you are doing.

Call your health care provider if you have any new symptoms, such as:

- Fever.
- Severe abdominal pain.
- Weakness.
- Swelling.
- Infection.

After your gallbladder is removed, ask your health care provider about changing your diet and taking supplements to aid digestion. Eat small amounts of healthy fats throughout the day instead of eating a lot of fat at one time.

Avoid trans fat. Trans fat is found in margarine, baked goods and fried foods. Eating foods and drinks that are fermented and that have probiotics in them can help you keep your digestive system healthy.



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## Summary

The gallbladder is a small pouch that sits under the liver on the right side of the abdomen and stores bile. Sometimes bile juices can harden and form stones in the gallbladder. These stones can move and block the cystic duct and cause severe pain.

Preventing gallstones and infections is always better than trying to treat them after they happen. Regular exercise and eating small, healthy meals throughout the day can help keep your gallbladder in good condition.

If you have gallstones, you may want to consider other treatment options before having surgery. But if you have an inflamed pancreas, a severe infection or other complications from gallstones, you may need surgery to remove your gallbladder.

There are 2 ways to take out the gallbladder. One method called open cholecystectomy uses a big skin incision. The other method called laparoscopic cholecystectomy is done with scopes and smaller incisions. The benefits of a laparoscopic operation include a faster recovery period and shorter hospital stay.

This surgery is safe. But there are several possible risks and complications. Though rare, infections, as well as bleeding and scarring, may happen.

Your gallbladder is an important organ in helping your body digest fat. After your gallbladder is removed, ask your health care provider about changing your diet and taking supplements to aid digestion. Eat small amounts of healthy fats throughout the day instead of eating a lot of fat at one time.



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